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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte URI ELZUR

Appeal 2007-3129
Application 10/651,459
Technology Center 2600

Decided: January 16, 2008

Before JOSEPH F. RUGGIERO, SCOTT R. BOALICK, and KEVIN F. TURNER, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Final Rejection of claims 1-12 and 14-29. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Appellant's claimed invention relates to the processing of transmission frames and, in particular, the receiving and handling of out-of-order frames by a network subsystem. The out-of-order frames are placed in host memory and information relating to one or more holes resulting from the out-of-order frames is managed in a receive window.

Claim 1 is illustrative of the invention and reads as follows:

1. A method for handling out-of-order frames, comprising the steps of:

- (a) receiving an out-of-order frame via a network subsystem;
- (b) placing data of the out-of-order frame in a host memory; and
- (c) managing information relating to one or more holes resulting from the out-of-order frame in a receive window.

The Examiner relies on the following prior art references to show unpatentability:¹

Mallory	US 2002/0034182 A1	Mar. 21, 2002
Hayes	US 2003/0046330 A1	Mar. 6, 2003

Claims 1, 4-12, and 14-22 stand rejected under 35 U.S.C. § 102 as being anticipated by Mallory.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mallory in view of Hayes.

Claims 23-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mallory in view of Hayes and the admitted prior art.

¹ In addition, the Examiner relies upon Appellant's admissions as to the prior art at paragraph [09] of Appellant's Specification.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs and Answer for the respective details.

ISSUES

- (i) Under 35 U.S.C § 102, does Mallory have a disclosure which anticipates the invention set forth in claims 1, 4-12, and 14-22?
- (ii) Under 35 U.S.C § 103(a), with respect to appealed claims 2 and 3, would one of ordinary skill in the art at the time of the invention have found it obvious to combine Mallory with Hayes to render the claimed invention unpatentable?
- (iii) Under 35 U.S.C § 103(a), with respect to appealed claims 23-29, would one of ordinary skill in the art at the time of the invention have found it obvious to combine Mallory with Hayes and the admitted prior art to render the claimed invention unpatentable?

PRINCIPLES OF LAW

1. ANTICIPATION

It is axiomatic that anticipation of a claim under § 102 can be found if the prior art reference discloses every element of the claim. *See In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458 (Fed. Cir. 1984).

In rejecting claims under 35 U.S.C. § 102, a single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation. *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375-76 (Fed. Cir. 2005), citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992). Anticipation of a patent claim requires a finding that the claim at issue “reads on” a prior art reference. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed Cir. 1999) (“In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.”) (internal citations omitted).

2. OBVIOUSNESS

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. See *In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 467 (1966). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings

directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007)(quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

ANALYSIS

35 U.S.C. § 102 REJECTION

Independent claims 1 and 17

With respect to the 35 U.S.C. § 102 rejection of independent claims 1 and 17 based on the teachings of Mallory, the Examiner indicates (Ans. 3) how the various limitations are read on the disclosure of Mallory. In particular, the Examiner directs attention to the illustration in Figure 4 of Mallory as well as the disclosure at paragraphs [0011], [0060], and [0141] of Mallory.

In our view, the Examiner’s analysis is sufficiently reasonable that we find that the Examiner has at least satisfied the burden of presenting a prima facie case of anticipation. The burden is, therefore, upon Appellant to come forward with evidence and/or arguments which persuasively rebut the Examiner’s prima facie case. Only those arguments actually made by Appellant have been considered in this decision. Arguments which

Appellant could have made but chose not to make in the Briefs have not been considered and are deemed to be waived; *see* 37 C.F.R. § 41.37(c)(1)(vii).

Appellant's response asserts that the Examiner has not shown how each of the claimed features is present in the disclosure of Mallory so as to establish a *prima facie* case of anticipation. Our review of Appellant's arguments (Br. 6-11; Reply Br. 4-7), however, reveals that Appellant has simply reiterated the features recited in independent claims 1 and 17 and drawn a conclusion, without more, that the features in Mallory identified by the Examiner do not correspond to such claimed features. Such arguments do not, in our view, satisfy Appellant's burden of providing evidence and/or arguments which show how the Examiner has erred in presenting a *prima facie* case of anticipation.

For example, Appellant contends that the Examiner has erred in equating Mallory's reorder buffer 120 with the claimed host memory. According to Appellant (Br. 7; Reply Br. 5), the terms "reorder buffer" and "host memory" have a specific meaning in the relevant arts and are not equivalent. However, there is no evidence presented from Appellant as to what that specific meaning might be, let alone any indication that would support a conclusion that the Examiner has erred in asserting correspondence of Mallory's reorder buffer with the claimed host memory.

In our view, although we don't necessarily agree with the Examiner that correspondence exists merely because both Mallory's reorder buffer and Appellant's host memory both store out-of-order frames, we do find ample

evidence within the disclosure of Mallory to support the Examiner's view that the reorder buffer of Mallory can be considered a host memory as claimed. As described by Mallory (Fig. 4 and paragraph [0037]), the reorder buffer 120 exists within LARQ handler 100 which in turn exists within the data link layer of the network stack illustrated in Figure 1 of Mallory. This network stack is part of a networked computer environment such as disclosed in Mallory (Figure 14 and paragraph [145]) operating under control of personal computer 202. The personal computer 202 would, in our view, be recognized by skilled artisans as a host computer for the described network therefore making the LARQ handler reorder buffer a "host" memory as claimed.²

With respect to the claimed feature of managing out-of-order frame hole information in a "receive window", our review of Appellant's arguments reveals that they follow a similar format to those made with regard to the previously discussed "host memory" feature. In other words, Appellant has merely repeated the recited "receive window" feature of claims 1 and 17, repeated the passages cited by the Examiner from Mallory,

² The Computer Desktop Encyclopedia, Ninth Edition, by Alan Freedman, McGraw- Hill 2001 defines "host" as "[a] computer that acts as a source of information or signals. The term can refer to almost any kind of computer, from a centralized mainframe that is a host to its terminals, to a server that is host to its clients, to a desktop PC that is host to its peripherals. In network architectures, a client station (user's machine) is also considered a host, because it is a source of information to the network in contrast to a device such as a router or switch that directs traffic."

and has drawn the conclusion, without more, that the cited passages do not teach or suggest the claimed “receive window” feature.

We simply find no error, and there are no persuasive arguments from Appellant that show any error, in the Examiner’s finding (Ans. 3 and 8) that Mallory’s disclosure of the window designated as

“MaxRxSaveCountChannel from Receive Sequence Number” can be reasonably interpreted as a “receive window” as claimed. As disclosed by Mallory (paragraphs [058], [0140], and [141]), dependent on whether out-of-order received frame sequence numbers, and the holes created thereby, fall within the sliding receive window of valid sequence numbers, a determination is made as to how such frames are processed by the system. We fail to see why such a determination would not be reasonably considered by a skilled artisan as anything other than the management of out-of-order frame holes in a receive window as claimed.

Further, with respect to the control information and data information parsing feature of independent claim 17, we find no arguments from Appellant that convince us of any error in the Examiner’s finding that such feature is disclosed by Mallory. We agree with the Examiner (Ans. 11) that the use of the control bit values of 1 and 0, as described in TABLE 1 of Mallory and illustrated in Mallory’s Figures 6-8, provide evidence that out-of-order frames are parsed into control information and data information.

In view of the above discussion, since all of the claimed limitations are present in the disclosure of Mallory, the Examiner’s 35 U.S.C. § 102

rejection of independent claims 1 and 17, as well as dependent claims 5, 7, 15, 16, and 18-22 not separately argued by Appellant, is sustained.

Dependent claims 4, 6, and 8-12

Turning to a consideration of the Examiner's 35 U.S.C. § 102 rejection of separately argued dependent claims 4, 6, and 8-12 based on Mallory, we sustain this rejection as well. With respect to dependent claim 4, we find no error in the Examiner's finding that steps S5, S9, and S10 illustrated in the flow chart of Mallory's Figure 10 provide a disclosure of "missing" frames not being stored as claimed. We also refer to the discussion at paragraphs [0059] and [0106] of Mallory which discloses that "missing" frames declared as "lost" are discarded and are not stored.

With respect to dependent claims 6 and 8, we agree with the Examiner (Ans. 9), Appellant's arguments to the contrary notwithstanding, that Mallory's disclosure (e.g., paragraphs [0057], [0058], [0140], and [0141]) can reasonably be interpreted as disclosing that out-of-order frames identified as "old" are those which do not fall within the receive window of valid sequence numbers and those identified as "not too old" fall within the receive window. We also find no basis in the disclosure of Mallory for Appellant's conclusion (Reply Br. 9) that "too-old" frames in Mallory still qualify as out-of-order frames inside the receive window.

With respect to dependent claims 9-11, we find no error in the Examiner's finding that Mallory's status table 122 and the illustrations in Figure 9 of Mallory as well as the description at paragraph [0074] of

Mallory disclose the storing of information related to holes created by placement of out-of-order frame data. While Appellant is correct (Reply Br. 12) that Mallory's Figure 9a is an illustration of the channel table 110, it is also apparent that Mallory's Figure 9c illustration describes an example of information stored in status table 122 as it shows information such as receive time and miss time. As also pointed out by the Examiner (Ans. 10), the language of claims 9 and 10 requires only "one or more of" storing new hole information, updating existing hole information, and deleting plugged hole information. We further agree with the Examiner (Ans. 10) that the Figure 4 illustration in Mallory, which includes the receiver control logic 106, reorder buffer 120, and status table 122, is a disclosure of a network subsystem as claimed.

With respect to dependent claim 12, we are in agreement with the Examiner (Ans. 10) that Mallory discloses in paragraph [0140] the updating of a "receive window as claimed." Appellant reiterates the argument (Reply Br. 13) that Mallory does not disclose a "receive window" as claimed, an argument we found to be unpersuasive as discussed *supra*.

Dependent claim 14

Turning to a consideration of the Examiner's 35 U.S.C. § 102 rejection of dependent claim 14 based on Mallory, we do not sustain this rejection. We note that, while we found Appellant's arguments to be unpersuasive with respect to the Examiner's anticipation rejection of claims

1, 4-12, and 15-22, we reach the opposite conclusion with respect to the rejection of claim 14. In addressing the language of dependent claim 14 which requires “mapping TCP space into host buffer space,” the Examiner attempts (Ans. 10-11) to equate Mallory’s mere storing of received frames in reorder buffer 120 with the claimed mapping of host buffer space. We agree with Appellant, however, that the mere storing of a received frame in a buffer memory does not necessarily mean that the buffer memory space was mapped. As pointed out by Appellant (Br. 15; Reply Br. 14), information can be stored in a memory space using physical memory address information in which the memory addresses are not mapped to a corresponding space.

35 U.S.C. § 103(a) REJECTIONS

Dependent claims 2 and 3

Appellant’s arguments (Br. 16-20; Reply Br. 16) in response to the Examiner’s obviousness rejection of dependent claims 2 and 3 based on the combination of Mallory and Hayes assert a failure by the Examiner to establish a *prima facie* case of obviousness since proper motivation for the Examiner’s proposed combination of references has not been established. We find, however, that contrary to Appellant’s contention that the Examiner has merely identified isolated claimed elements such as the TCP offload engine (TOE) and the TCP-enabled Ethernet controller (TEEC) in the secondary reference to Hayes, the Examiner has set forth an articulated line of reasoning for establishing the basis for the proposed of combination of

Hayes with Mallory. We simply find no error, and there are no persuasive arguments from Appellant that show any error, in the Examiner's finding (Ans. 6, 12, and 13) of obviousness to the skilled artisan of utilizing an offload engine such as taught by Hayes in the system of Mallory to support high bandwidth communication.

Claims 23-29

Similarly, with respect to appealed claims 23-29, we find no error in the Examiner's reliance on Hayes and the admitted prior art in combination with Mallory to establish a *prima facie* case of obviousness with respect to these claims, which include a recitation to a network subsystem.

Appellant's arguments in response (Br. 21; Reply Br. 16) reiterate the alleged lack of disclosure by Mallory of the claimed "receive window," which arguments we found to be unpersuasive for all of the reasons discussed *supra*.

For the above reasons, since it is our opinion that the Examiner's *prima facie* case of obviousness has not been overcome by any convincing arguments from Appellant, the Examiner's 35 U.S.C. § 103(a) rejection of claims 2, 3, and 23-29 is sustained.

CONCLUSION

In summary, with respect to the Examiner's 35 U.S.C. § 102 rejections of appealed claims 1, 4-12, and 14-22, we have sustained the rejection of claims 1, 4-12, and 15-22, but have not sustained the rejection of claim 14. We have sustained the Examiner's 35 U.S.C. § 103(a) rejection of claims 2, 3, and 23-29. Accordingly, the Examiner's decision rejecting appealed claims 1-12 and 14-29 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(effective September 13, 2004).

Appeal 2007-3129
Application 10/651,459

AFFIRMED-IN-PART

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